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South Carolina Department of Natural Resources Geological Survey 1825

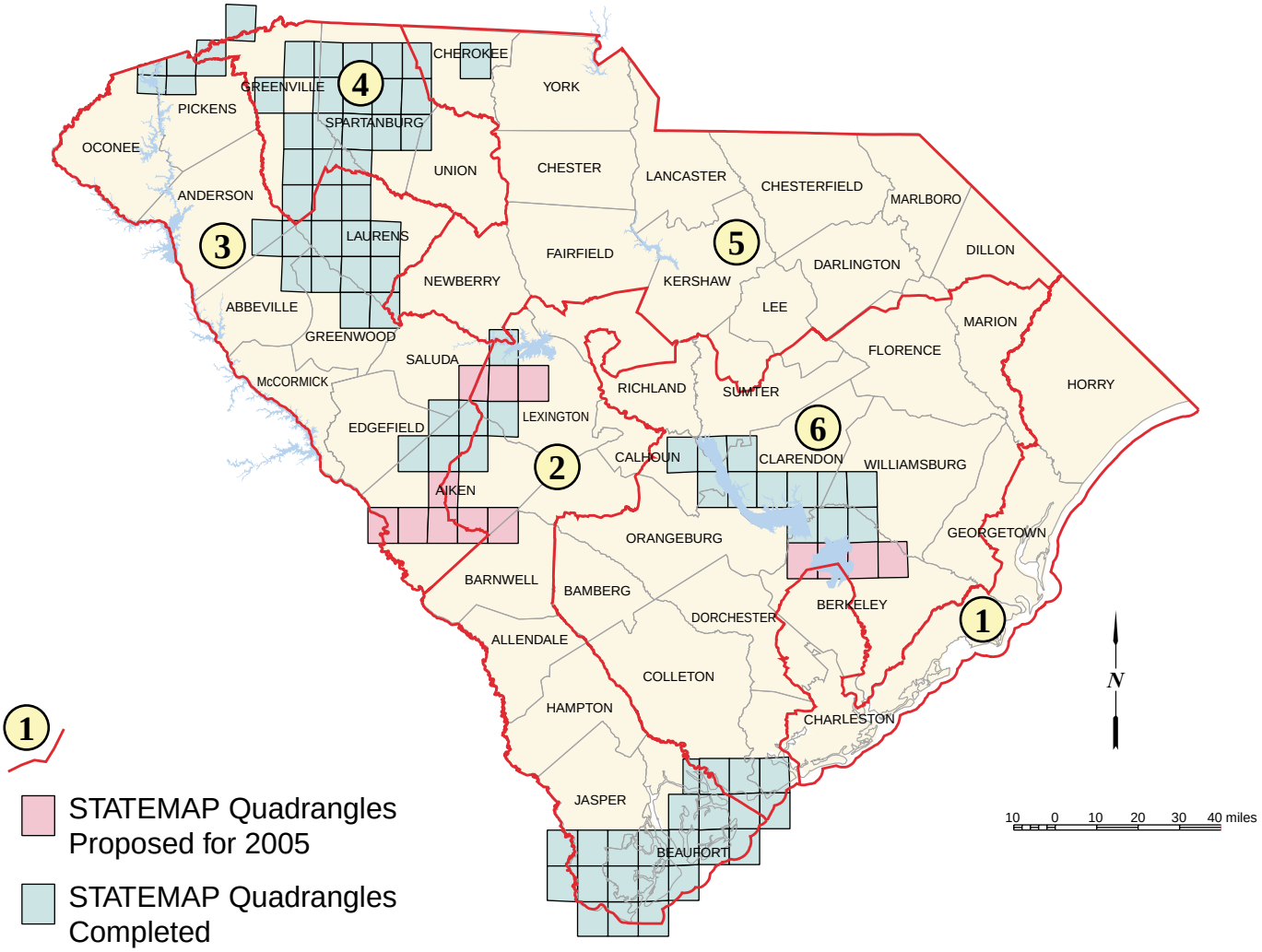
United States Geological Survey

USGS science for a changing world

National Cooperative Geologic Mapping Program

STATEMAP Component: States compete for federal matching funds for geologic mapping

SOUTH CAROLINA



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SUMMARY OF THE STATEMAP
GEOLOGIC MAPPING COMPONENT IN SOUTH CAROLINA

Funds Matched by SCGS since 1993	**$1,630,539**

By placing emphasis on the socio-economic needs for new geologic information, the STATEMAP component of the National Cooperative Mapping Program compliments the legislatively mandated duties of the South Carolina Department of Natural Resources, Geological Survey (SCGS). Those duties include geologic reconnaissance, mapping, and gathering of surface and subsurface data. The information gathered is applied to other legislatively defined duties involving advice and assistance to other State and local government agencies engaged in environmental protection, regional planning, effective land use, and economic development.

The SCGS has participated in STATEMAP since 1993. Funding from STATEMAP awards allows Federal dollars to be used by the SCGS to address socio-economic needs for geologic information on the county and local level. Original STATEMAP projects addressed identification and economic development of mineral resources in the Piedmont. In 1995 the priorities of the SCGS were changed; and more emphasis was placed on geologic information addressing effective land-use planning and environmental concerns. Expansion of STATEMAP mapping into the Coastal Plain also was part of that change in emphasis. Subsequent STATEMAP mapping in 1996 and 1997 in the Coastal Plain produced the first 1:24,000-scale maps of the area around the Pinewood toxic waste dump on the northern shore of Lake Marion. At this same time, mapping in the Piedmont was redirected to address the needs of land-use planning adjacent to the I-85 growth corridor in Greenville and Spartanburg. In 2002 structural information generated by part of that mapping was applied to understanding the controls of uranium-contaminated groundwater in the Simpsonville-Fountain Inn area. This information assisted SCDHEC in more detailed studies of water quality. At the 1997 STATEMAP Advisory Committee meeting, a committee member recommended a shift in SCGS priorities to the southern coast to address the impact of rapid growth on the sensitive marsh ecosystem. In 1998 STATEMAP priorities were modified to accommodate that recommendation, and a five-year plan to map the southern coast from Edisto Island to the Savannah River was developed. New 1:24,000-scale maps in an electronic format now are available for the southern coast from Edisto Beach to the Savannah River.

Prior to 2002 land-use planning and environmental protection were given priority in STATEMAP projects. Earthquake awareness and the impact that such a catastrophe would have on critical infrastructure were basically left to the S.C. Emergency Preparedness Division. After splay faults related to the Eastern Piedmont fault system were recognized underlying the high-risk, earthen Lake Murray dam and FERC demanded a $250-million-plus retrofitting project, priorities were reevaluated. At the 2003 STATEMAP Advisory Committee meeting, priorities were changed to emphasize the protection of infrastructure. This mapping focuses on known fault zones in the Piedmont and Coastal Plain, which could affect the Columbia or Charleston metropolitan areas. The geology of the Savannah River Site also will be digitized as part of this new priority. New detailed digital maps of site geology are considered a subject of homeland security. During 2004 mapping also began in the Jocassee Gorges area to help develop a management plan. The primary goal of this work is to delimit specific rock types that influence the location of sensitive ecosystems containing endangered plant species.

The benefits of STATEMAP to South Carolina exist on several levels. The primary benefit is the development of new detailed geologic maps. The new map information can be used by many diverse interests or for specific purposes without significantly diminishing the value received by all. It should be understood that there is a defined need for a government-based mapping program as it affects the quality of life of individual citizens, as well as the State's economic growth, emergency response, natural resource management, and environmental monitoring. What organization, other than a government agency, could collect, analyze, update, revise, and maintain the information necessary to produce the maps, while not trying to develop a profit? Secondly, STATEMAP has enabled the SCGS to develop a competent GIS product refinement program. This program is now producing and distributing a new generation of high-quality digital maps with detailed explanations and cross sections. It is in the best interest of South Carolina to be involved in STATEMAP because it makes geologic map information widely available at low cost and because such information maximizes the benefits and opportunities for all citizens and businesses.

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